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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BATTAGLIA, MICHAEL V

ART UNIT	PAPER NUMBER
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2652

10

DATE MAILED: 01/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/612,970

Applicant(s)

KOH, YOUNG-OK

Examiner

Michael V Battaglia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,9-15 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,9,10 and 17-20 is/are rejected.
- 7) ☒ Claim(s) 9,11-15 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Claim Objections

1. Claim 9 is objected to because of the following informality: The examiner suggests replacing the period at the end of line 9 of claim 9 with a semicolon. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. Claims 1 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fukuda et al (hereafter Fukuda) (US 6,097,680).

Fukuda discloses a method of reproducing data from a disc in a disc-reproducing system, the method comprising: positioning a pick-up (Fig. 10, element 4) at a position on the disc and counting a number of track traverse pulses which are generated when a tracking is switched to "OFF" at a lowest speed factor (Col. 12, line 60-Col. 13, line 18); positioning the pick-up at a predetermined position, which is the same position as the position for the low speed counting, on the disc and counting a number of track traverse pulses which are generated when a tracking is switched to "OFF" at a highest speed factor (Col. 13, lines 19-35); obtaining a frequency of vibration of the disc by subtracting the number of track traverse pulses at the lowest speed factor from the number of track traverse pulses at the highest speed factor (Col. 13, lines 41-43); and varying a speed factor of reproducing data from the disc, by comparing the frequency of vibration with a predetermined base value (Col. 14, lines 45-48). Fukuda does not specifically disclose that the pick-up is positioned at a predetermined position on the disc. Nonetheless, the pick-up would be positioned at a predetermined position inherently because a pick-up is positioned according to a predetermined program or it would be obvious for the pick-up to move to a predetermined

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position such as a TOC, which is a well-known starting location, before starting the process of trying to read information from an optical disc.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to position the pick-up of Fukuda at a predetermined position, the motivation being to start reading from a starting point.

3. Claim 3 is rejected under 35 U.S.C. 102(e) as being anticipated by Hirashima (US 6,377,527). Hirashima discloses a method of reproducing data from a disc, the method comprising: positioning a pick-up at a predetermined position on the disc and counting a number of track traverse pulses which are generated when a tracking loop is switched to "OFF" at an arbitrary speed factor, and varying a speed factor of reproducing data from the disc, by comparing the number of track traverse pulses with a predetermined base value (Col. 3, lines 21-32).

4. Claims 3 and 17-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Yen et al (hereafter Yen) (US 6,097,680).

In regard to claim 3, Yen discloses a method of reproducing data from a disc in a disc-reproducing system, the method comprising: positioning a pick-up at a position on the disc (Figs. 3-5, element 43 and Fig. 6, element 53) and counting a number of track traverse pulses which are generated (Fig. 6, elements 54-55) when a tracking loop is switched to "OFF" (Fig. 6, element 51 and Col. 3, line 64-Col. 4, line 26) at an arbitrary speed factor (Fig. 6, element 52), and varying a speed factor of reproducing data from the disc, by comparing the number of track traverse pulses with a predetermined base value (Fig. 6, elements 57-60).

In regard to claim 17, Yen discloses an apparatus for reproducing data from a disc inducing vibration, the apparatus comprising: a pick-up unit detecting a tracking traverse signal (Fig. 2, element 22), a signal comparator comparing the tracking traverse signal with a base signal and then

generating a tracking traverse pulse signal comprised of at least one tracking traverse pulse (Fig. 2, element 32), and a control unit that counts the number of track traverse pulses generated in the signal comparator (Fig. 2, element 42) at a first revolving speed of the disc and also at a second revolving speed of the disc (Fig. 6, elements 52, 54-55, and 60), determines a frequency of vibration of the disc based upon the track traverse pulse counts (Fig. 6, elements 54-56), and changes a speed of the disc based upon the frequency of vibration of the disc (Fig. 6, elements 57-60). The examiner notes that Yen does disclose determining a frequency of vibration for the reasons stated in the response to arguments.

In regard to claim 18, Yen discloses that the pick-up unit further comprises a tracking "OFF" state (Fig. 6, element 51) and a tracking "ON" state (Fig. 6, element 61), and the pick-up unit tracking traverse signal by revolving the disc in the tracking "OFF" state (Fig. 6). Yen discloses a pick-up unit that reduces the track correction gain while the tracking traverse signal is being detected. The examiner notes that the reduced track correction gain state is interpreted as a tracking "OFF" state (Col. 4, lines 10-26).

In regard to claim 19, Yen discloses a signal amplifying unit to differentially amplify the tracking traverse signal detected in the pick-up unit prior to sending the signal to the signal comparator (Figs. 3-5, element 39).

In regard to claim 20, Yen discloses a control unit that counts the number of track traverse pulses when the apparatus begins moving the reading along the track, i.e. at a predetermined time (Fig. 2, elements 53-55).

5. Claim 4 is rejected under 35 U.S.C. 102(e) as being anticipated by Fukuda.

Fukuda discloses an apparatus for reproducing data from a disc inducing vibration, the apparatus comprising: a pick-up unit detecting a tracking traverse signal by revolving the disc in a

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tracking "OFF" state (Col. 12, lines 62-63); a signal amplifying unit differentially-amplifying the tracking traverse signal detected by the pick-up unit (Fig. 10, element 40); a signal comparator generating a tracking traverse pulse after comparing the tracking traverse signal amplified in the signal amplifying unit with a base signal (Col. 13, lines 6-9); and a control unit counting the number of tracking traverse pulses generated by the signal comparator at a lowest speed factor of the disc and also at a highest speed factor of the disc (Figure 10, element 60), obtaining the difference between the two counted numbers (Fig. 10, element 66), and then determining a frequency of vibration of the disc based upon the difference (Fig. 10, element 50), and varying a speed factor of the disc as a function of the frequency of vibration (Fig. 10, element 50). The examiner notes that the signal comparator is inherent for the reasons stated above in the response to arguments.

Claim Rejections - 35 USC § 103

6. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda in view of Fueki et al (hereafter Fueki) (EP 0 833 328 A2).

Fukuda discloses the method of reproducing data from a disc in a disc-reproducing system and the apparatus for reproducing data from a disc inducing vibration of claims 1 and 4, wherein tracking is switched "OFF" while the control unit counts the number of track traverse pulses at different disc revolving speeds (Col. 12, lines 62-63). Fukuda does not disclose that the control unit counts the number of track traverse pulses at a predetermined time after checking an innermost circumference of the disc when tracking is switched to "OFF".

Fueki discloses a method of reproducing data from a disc in a disc-reproducing system and an apparatus for reproducing data from a disc inducing vibration. Fueki further discloses that when an optical disc is loaded, the pick-up moves to the innermost circumference of the disc. The

method and apparatus inherently “check” that the pick-up is at the innermost circumference of the disc because the process of detecting track traverses and vibration begins a finite or “predetermined” amount of time after the method and apparatus are able to “check” that the pick-up is fixed at the innermost circumference of the disc (Col. 6, lines 20-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to move the pick-up in the method and apparatus of Fukuda to the innermost circumference of the disc and begin to count the number of track traverse pulses after the tracking is switched “OFF” and a predetermined amount of time after checking the innermost circumference; the motivation being to start the pick-up at a set location, thereby providing uniform results each time a disc is checked for vibration and a speed set.

7. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda in view of Hirashima.

In regard to claim 9, Fukuda discloses a method of reproducing data from a revolving disc in a disc-reproducing system, comprising counting a number of track traverse pulses at a first revolving speed (Col. 13, lines 12-18); counting a number of track traverse pulses at a second revolving speed (Col. 13, lines 24-35); determining a frequency of vibration of the disc by comparing the number of track traverse pulses counted at the first revolving speed with the number of track traverse pulses counted at the second revolving speed (Col. 13, lines 40-44); comparing the determined frequency of vibration of the disc with a predetermined base value (Col. 13, lines 59-61); and revolving the disc at a reproducing speed based upon the comparison of the determined frequency of vibration with the predetermined base value (Col. 14, lines 52-55). Fukuda discloses setting the first revolving speed to a 1x speed (Col. 12, line 65) and setting the second revolving speed to a high speed (Col. 13, lines 19-20). At the time of Fukuda’s invention, a

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high disc revolving speed was a 12x speed (Col. 1, lines 26-30). As a result, Fukuda's second revolving speed falls short of being 24 times the first revolving speed.

Hirashima discloses a method of reproducing data from a disc in a disc-reproducing system that counts a number of track traverse pulses at different, increasing revolving speeds, determines a frequency of vibration and compares it to a predetermined base value, and revolves the disc at a reproducing speed based upon the comparison of the determined frequency of vibration with a predetermined base value (Fig. 2). Hirashima teaches that at the time of his invention, a high disc revolving speed was a 24x speed (Col. 3, line 35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the 24x speed as the high speed for the second revolving speed in the circuit of Fukuda as taught by Hirashima which will consequently, make the second revolving speed approximately 24 times the first revolving speed, the motivation being use a high disc revolving speed representative of the state of technology at the time of the invention.

In regard to claim 10, Fukuda discloses a method wherein the reproducing speed is decreased with increased frequency of vibration (Col. 14, lines 41-55).

8. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda in view of Minase (US 6,111,826).

In regard to claim 9, Fukuda discloses a method of reproducing data from a revolving disc in a disc-reproducing system, comprising counting a number of track traverse pulses at a first revolving speed (Col. 13, lines 12-18); counting a number of track traverse pulses at a second revolving speed (Col. 13, lines 24-35); determining a frequency of vibration of the disc by comparing the number of track traverse pulses counted at the first revolving speed with the number of track traverse pulses counted at the second revolving speed (Col. 13, lines 40-44);

comparing the determined frequency of vibration of the disc with a predetermined base value (Col. 13, lines 59-61); and revolving the disc at a reproducing speed based upon the comparison of the determined frequency of vibration with the predetermined base value (Col. 14, lines 52-55).

Fukuda discloses setting the first revolving speed to a 1x speed (Col. 12, line 65) and setting the second revolving speed to a high speed (Col. 13, lines 19-20). At the time of Fukuda's invention, a high disc revolving speed was a 12x speed (Col. 1, lines 26-30). As a result, Fukuda's second revolving speed falls short of being 24 times the first revolving speed.

Minase teaches that at the time of his invention, a high disc revolving speed was a 24x speed (Col. 1, lines 11-17).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the 24x speed as the high speed for the second revolving speed in the circuit of Fukuda as taught by Minase which will consequently, make the second revolving speed approximately 24 times the first revolving speed, the motivation being use a high disc revolving speed representative of the state of technology at the time of the invention.

In regard to claim 10, Fukuda discloses a method wherein the reproducing speed is decreased with increased frequency of vibration (Col. 14, lines 41-55).

Citation of Relevant Prior Art

9. Takagi et al (US 5,440,535) discloses a signal amplifying unit for differentially-amplifying a tracking traverse signal detected by a pick-up and a signal comparator generating a tracking traverse pulse after comparing the amplified tracking traverse signal with a base signal (Fig. 1).

Allowable Subject Matter

10. Claims 11-15, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

None of the references alone or in combination disclose or suggest a method or apparatus including positioning a pick-up at a predetermined position on the disc and counting a number of track traverse pulses which are generated when tracking is switched to "OFF" at a lowest speed factor, positioning the pick-up at a predetermined position on the disc and counting a number of track traverse pulses which are generated when a tracking is switched to "OFF" at a highest speed factor, obtaining a frequency of vibration of the disc by subtracting the number of track traverse pulses at the lowest speed factor from the number of track traverse pulses at the highest speed factor, and varying a speed factor of reproducing data from the disc, by comparing the frequency of vibration with a predetermined base value; and further including beginning counting of track traverses 100ms after checking the innermost circumference of a disc or a reproducing speed that is approximately 16 times the first revolving speed when the frequency of vibration is determined to be greater than or equal to 80Hz, 20 times the first revolving speed when the frequency of vibration is determined to be greater than or equal to 40Hz and less than 80Hz, and 24 times the first revolving speed when the frequency of vibration is determined to be less than 40Hz.

Response to Arguments

11. Applicant's arguments, see page 8, lines 1-11, filed November 10, 2003, with respect to prior art under 35 USC §102(e) have been fully considered but they are not persuasive. Applicant cannot rely upon the foreign priority papers to overcome rejections that use the Hirashima

reference because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15. Therefor, applicant's arguments, filed November 10, 2003, with respect to the rejection of claim 3 under 35 USC §102(e) on page 9, lines 25-30 and with respect to the rejections of claims 9-10 and 18-20 under 35 USC §103(a) on page 10, line 21-page 11, line 3 have been fully considered but they are moot because they rely on the unpersuasive argument discussed above.

12. Applicant's arguments, see page 8, lines 20-29, filed November 10, 2003, with respect to the rejection of claim 1 under 35 USC §102(e) have been fully considered but they are not persuasive. Fukuda does not specifically disclose that the pick-up is positioned at a predetermined position on the disc. Yet, Fukuda does disclose that the pick-up (Fig. 10, element 4) is positioned at a position on the disc (Col. 13, lines 4-7) because a signal is reproduced from the disc. The examiner asserts that it would be inherent or obvious to position the pick-up at a predetermined location in the rejection above.

13. Applicant's arguments, see page 8, line 30-page 9, line 24, filed November 10, 2003, with respect to the rejection of claim 4 under 35 USC §102(e) have been fully considered but they are not persuasive. Fukuda discloses that at least part of a regenerative signal (track traverse signal) is supplied to a counter as a track traverse pulse after being amplified in a preamplifier circuit (Col. 13, lines 6-9). Due to the existence of a track traverse pulse, it is reasonable for the examiner to expect that the amplified regenerative signal is compared to some threshold or base value in order to determine when a track crossing has occurred. In other words, a signal comparator is inherent in the apparatus of Fukuda because without one, there would be no way to distinguish a track traverse event from any of the other track traverse information reproduced from a disc and no track traverse pulse could be produced. The examiner notes that it is possible, in the apparatus of

Fukada, for the signal comparator to compare a track traverse signal to a base signal before the track traverse signal is amplified by the preamplifier circuit instead of the comparing the amplified signal to a base signal. However, this would be an arbitrary design consideration that fails to patentably distinguish the claimed apparatus from the apparatus of Fukuda.

14. Applicant's arguments, see page 9, line 31-page 10, line 11, filed November 10, 2003, with respect to the rejection of claim 17 under 35 USC §102(e) have been fully considered but they are not persuasive. The examiner is unable to understand the applicant's argument that Yen does not determine a frequency of vibration. Yen discloses an apparatus for reproducing data from a disc inducing vibration by counting track deviations, which are caused by vibration, in a predetermined time period and using the count of vibration induced track deviations to determine a rotation speed that prevents unwanted vibration (Abstract and Figs. 2 and 6). The applicant notes that Yen counts track deviations over a period of time. Frequency is a number of occurrences in an amount of time. Therefore, Yen determines a frequency of vibration.

15. Applicant's arguments, see page 10, lines 14-20, filed November 10, 2003, with respect to the rejection of claim 2 and 5 under 35 USC §103(a) have been fully considered but they are not persuasive. The applicant's argument that 2 and 5 are patentable at least for the same reasons as their respective base claims is moot for the reasons stated above.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V Battaglia whose telephone number is (703) 305-4534. The examiner can normally be reached on 5-4/9 Plan with 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


Michael Battaglia


BRIAN E. MILLER
PRIMARY EXAMINER